STEREO CASSETTE MUSIC SYSTEM

MODEL AF-5050EE,EE1,UK,UK1

AIWA®

(SERVICE MANUAL)

ISO

Set using ISO screws

DATE OF ISSUE 25/10/1976

SPECIFICATIONS

Model Type	Stereo cassette music system
Semiconductors	6 IC, 47 transistors, 22 diodes, 1 FET, 3 LED
Power Supply	AF-5050EE,EE1..... AC 120 V/220 – 230 V, switchable 50/60 Hz AF-5050UK,UK1..... AC 120 V/240 V, switchable 50/60 Hz
Power Consumption	115 W (8 ohms) 140 W (4 ohms)
Dimensions	160 (H) x 590 (W) x 430 (D) mm (w/ dust cover)
Weight	13.5 kg (w/ dust cover)
Accessories	Speaker (EE1, UK1 only) 2 Indoor FM antenna 1 Head cleaning stick 1 Tape Cassette 1 Motor pulley (for 60 Hz) 1

≪ Tuner Section ≫

Frequency Range	FM: 87.5 MHz – 108 MHz (3.43 – 2.87 m) MW: 525 kHz – 1,605 kHz (571 – 187 m) SW: 5.9 – 16 MHz (50.9 – 18.7 m) LW: 150 – 340 kHz (2000 – 882 m)
Effective Sensitivity	FM: 2.5 μV (IHF) MW: 300 μV/m (IHF) SW: 40 μV (IHF) LW: 550 μV (IHF)
FM Frequency Response	20 Hz – 15,000 Hz
FM SN Ratio	62 dB
FM Distortion	0.6%
Muting Level	18 dB
Antennas	FM: 300 ohms (balanced), 75 ohms (unbalanced) AM: built-in antenna, terminal for external antenna

≪ FM Multiplex Section ≫

Separation	More than 38 dB (1 kHz)
Distortion	1.0%

≪ Turntable Section ≫

Model Type	Belt driven automatic turntable
Motor	4-pole synchronous motor
Speeds	33-1/3 and 45 rpm
S N Ratio	45 dB
Wow and Flutter	0.1% (WRMS)
Cartridge Type	Moving magnet (MM)
Separation	18 dB (33-1/3 rpm 1 kHz)
Tracking Force	2 – 2.5 grams

≪ Cassette Tape Deck Section ≫

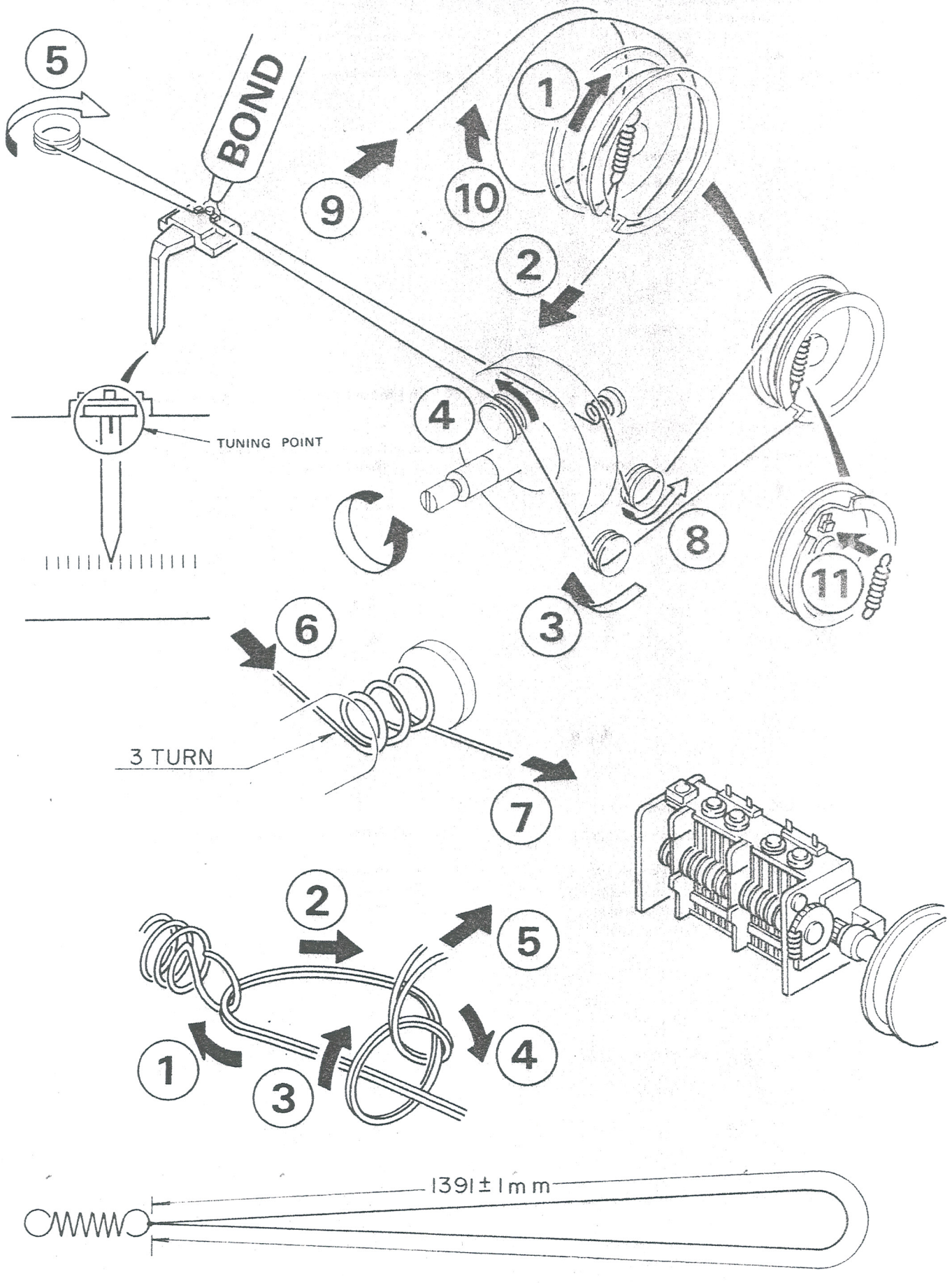
Track Format	4 tracks, 2 channels
Tape Speed	4.8 cm/sec
Recording Time	60 minutes (C-60)
Wow and Flutter	according to DIN 45 500 Blatt 8 0.2% 0.1% (WRMS)
Frequency Response	according to DIN 45 500 Blatt 8 Normal tape: 30 Hz – 11,000 Hz Fe-Cr tape: 30 Hz – 15,000 Hz CrO_2 tape: 30 Hz – 15,000 Hz Normal tape: 30 Hz – 12,000 Hz Fe-Cr tape: 30 Hz – 16,000 Hz CrO_2 tape: 30 Hz – 16,000 Hz
SN Ratio	according to DIN 45 500 Blatt 8 56 dB 58 dB (DOLBY NR ON CrO_2 tape)
Bias Frequency	61 kHz
Erase Method	AC erase
Motor	DC servo motor

≪ Audio Section ≫

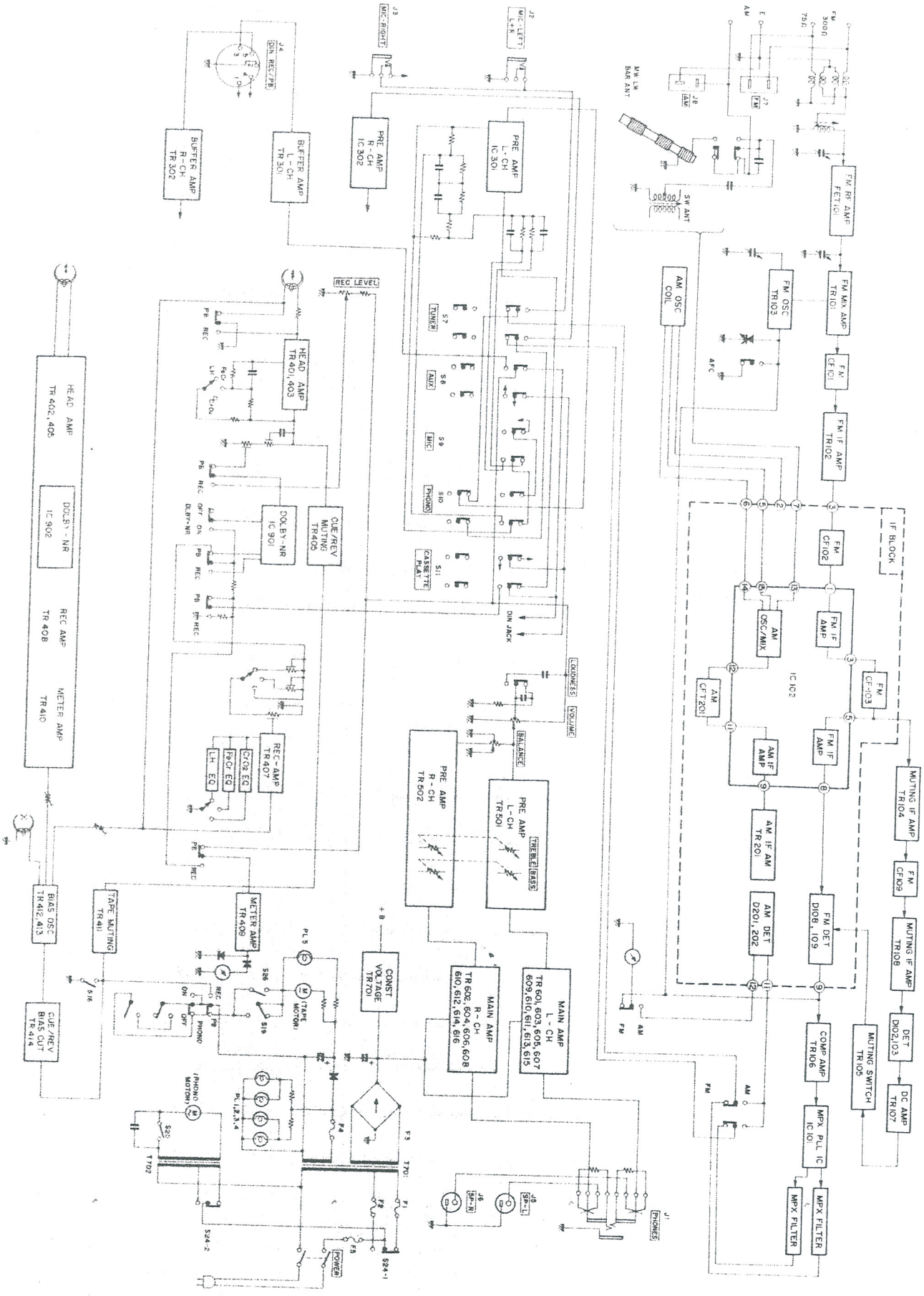
Circuitry	Pure complementary SEPP OTL
Continuous Power (40 – 20kHz/distortion 1%)	Music power: 10 W + 10 W (8 ohms) 15 W + 15 W (4 ohms)
(1 kHz/distortion 1%)	12 W + 12 W (8 ohms) 17 W + 17 W (4 ohms)
Music Power	20 W + 20 W (8 ohms) 25 W + 25 W (4 ohms)
Power Bandwidth	20 Hz – 20 kHz (0.3% distortion)
Loudness Response (with volume at – 40 dB)	+ 6 dB (100 Hz) + 4 dB (10 kHz)
Gain and Input Impedance	MIC: 1 mV (200 ohms – 10 k-ohms) DIN IN (TAPE PLAY): ≤ 500 mV (≧ 470 k-ohms)
Output Level and Impedance	DIN OUT (TAPE REC): 1 mV/k-ohm SPEAKERS: 4 – 8 ohms PHONES: 4 – 8 ohms
Tone Controls	BASS: 100 Hz ± 10 dB TREBLE: 10 kHz ± 10 dB

- Specifications and design are subject to change with out notice due to product improvements.
- Dolby Noise Reduction Circuit under License from Dolby Laboratories Incorporated.
- The word "Dolby" and "Double-D" symbol are trademarks of Dolby Laboratories Incorporated.

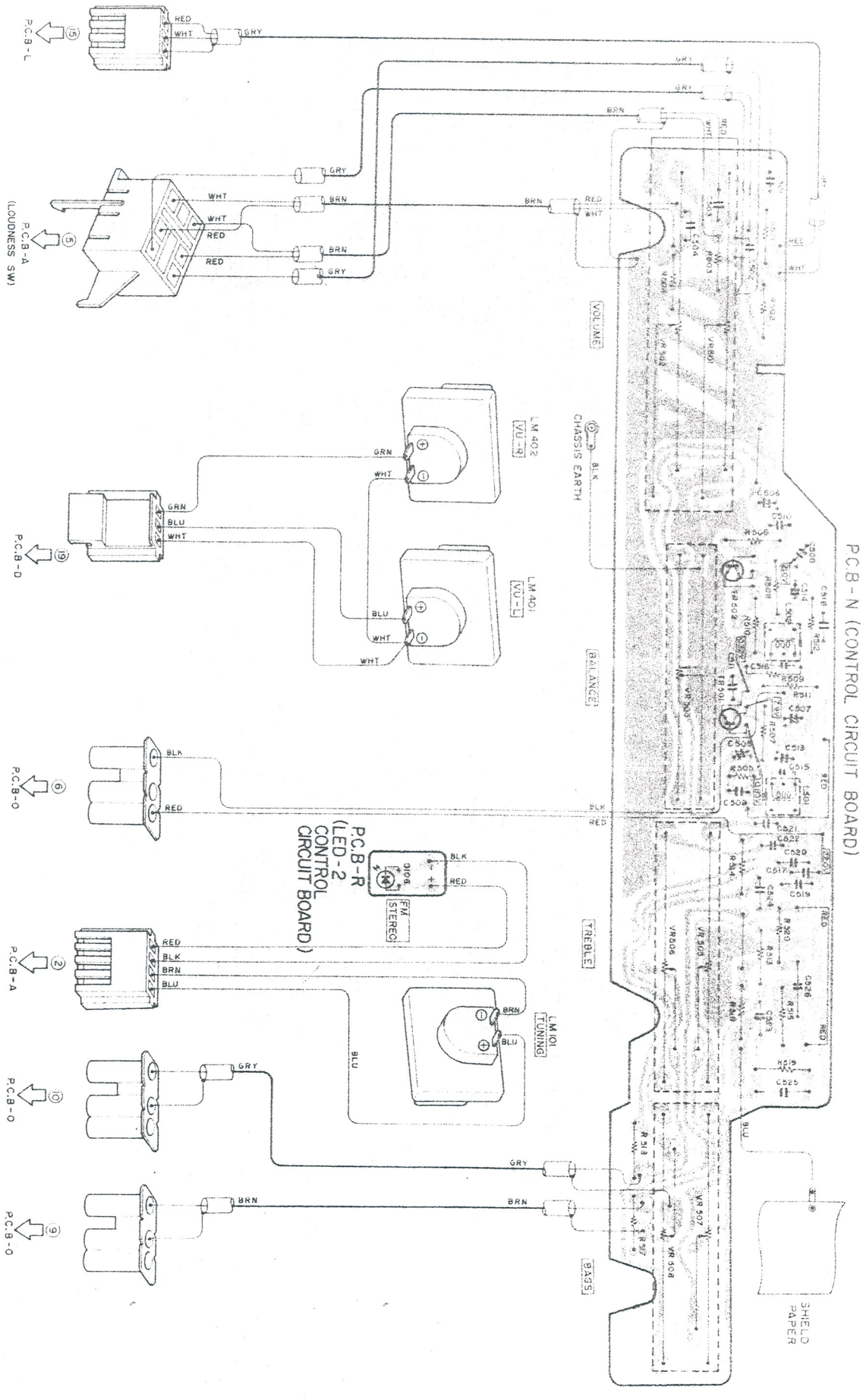
DIAL CORD STRINGING



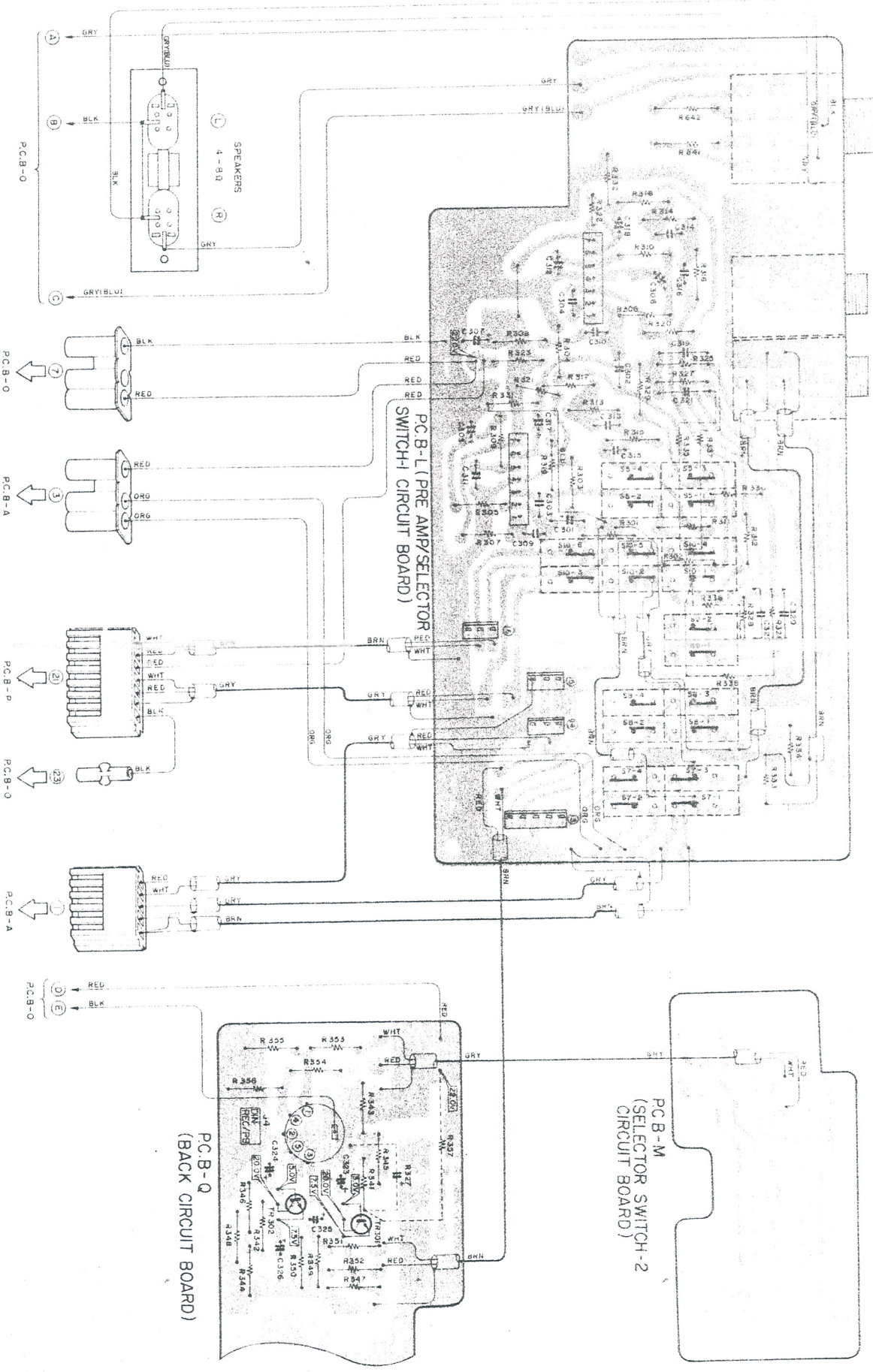
BLOCK DIAGRAM



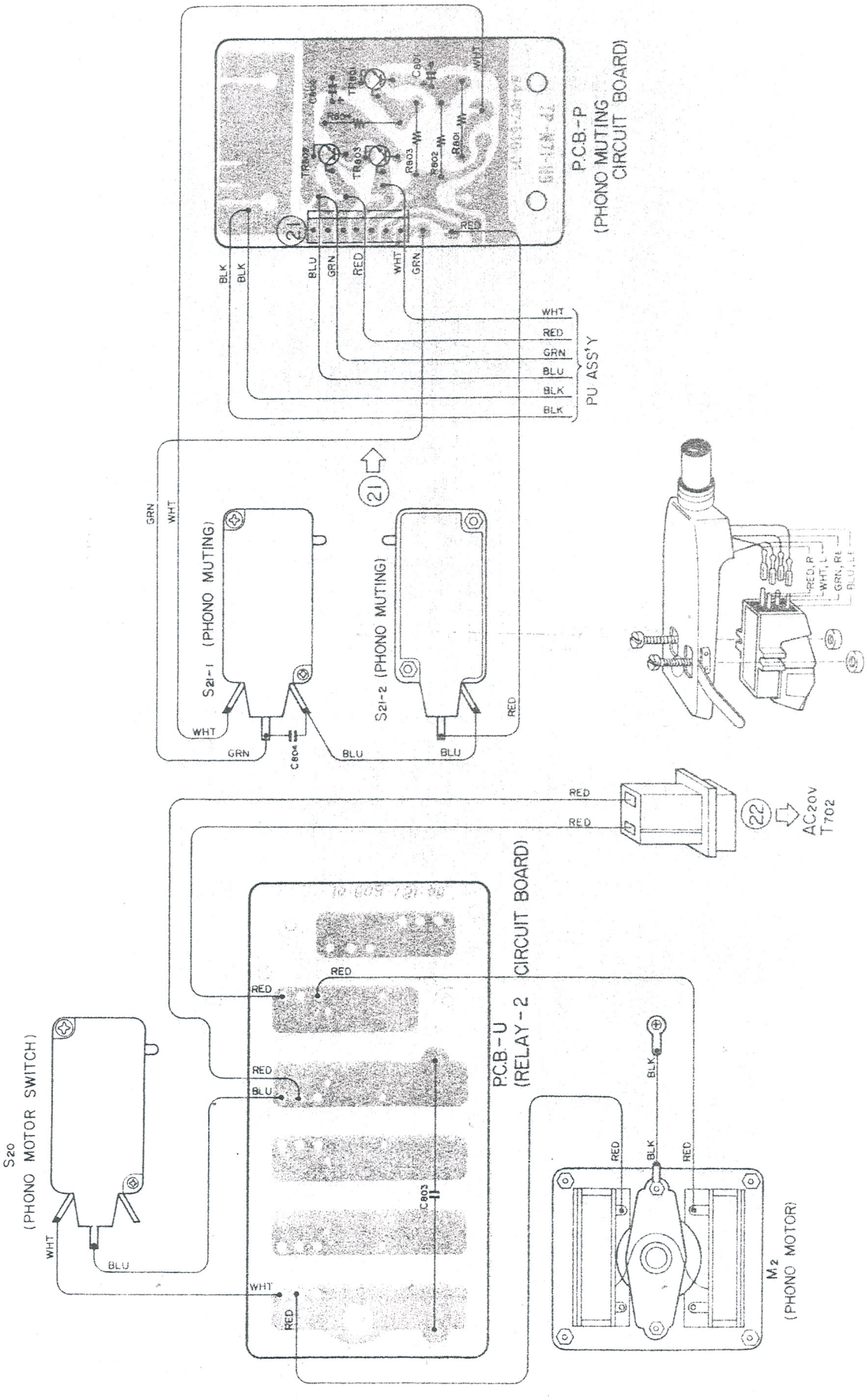
WIRING–4


P.C.B-L
RED
WHT
GRY
P.C.B-A
(LOUDNESS SW)
WHT
WHT
RED
RED
BRN
BRN
GRY
GRY
GRY
BRN
VOLUME
LM 402
(VU-R)
GRN
WHT
CHASSIS EARTH
BLK
P.C.B-D
GRN
BLU
WHT
LM 401
(VU-L)
BLU
WHT
WHT
BALANCE
P.C.B-O
BLK
RED
P.C.B-R
(LED-2
CONTROL
CIRCUIT BOARD)
3104
FM
STEREO
BLK
RED
TREBLE
P.C.B-A
RED
BLK
BRN
BLU
LM 101
(TUNING)
BRN
BLU
BLU
P.C.B-O
GRY
GRY
P.C.B-O
BRN
BRN
BASS
P.C.B-N (CONTROL CIRCUIT BOARD)
SHIELD
PAPER

WIRING–3

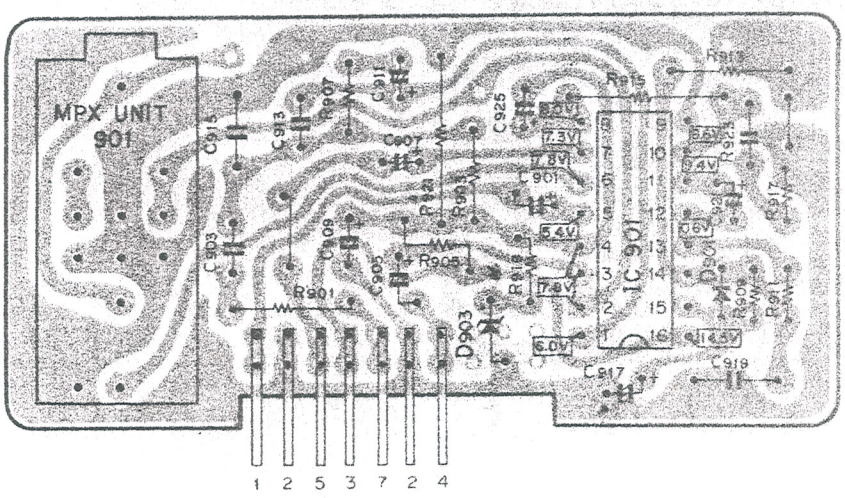

P.C.B-L (PRE AMP/SELECTOR SWITCH-I CIRCUIT BOARD)
P.C.B-Q (BACK CIRCUIT BOARD)
P.C.B-M (SELECTOR SWITCH-2 CIRCUIT BOARD)
SPEAKERS 4-8Ω
P.C.B-O
P.C.B-A
P.C.B-P
GRY
GRY(BLU)
BLK
RED
ORG
WHT
BRN

WIRING–5

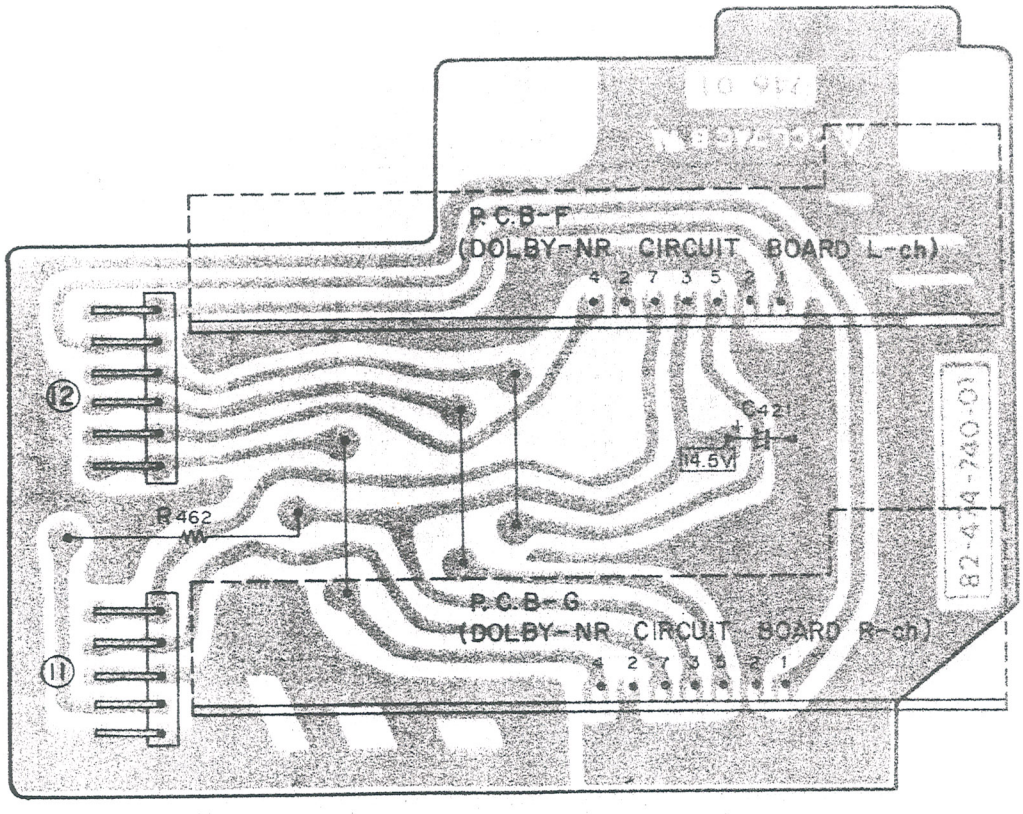

P.C.B-P
(PHONO MUTING
CIRCUIT BOARD)
PU ASS'Y
S21-1 (PHONO MUTING)
S21-2 (PHONO MUTING)
AC20V
T702
P.C.B-U
(RELAY-2 CIRCUIT BOARD)
S20
(PHONO MOTOR SWITCH)
M2
(PHONO MOTOR)

DOLBY-NR CIRCUIT BOARD

P. C. B- F (DOLBY-NR CIRCUIT BOARD L-ch)

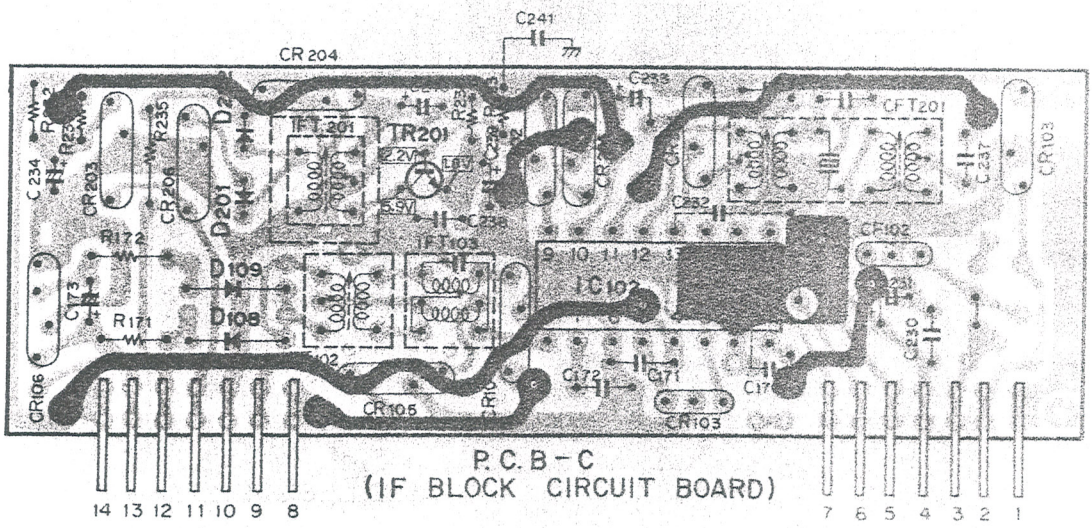


RELAY-1 CIRCUIT BOARD



P.C.B-H (RELAY-1 CIRCUIT BOARD)

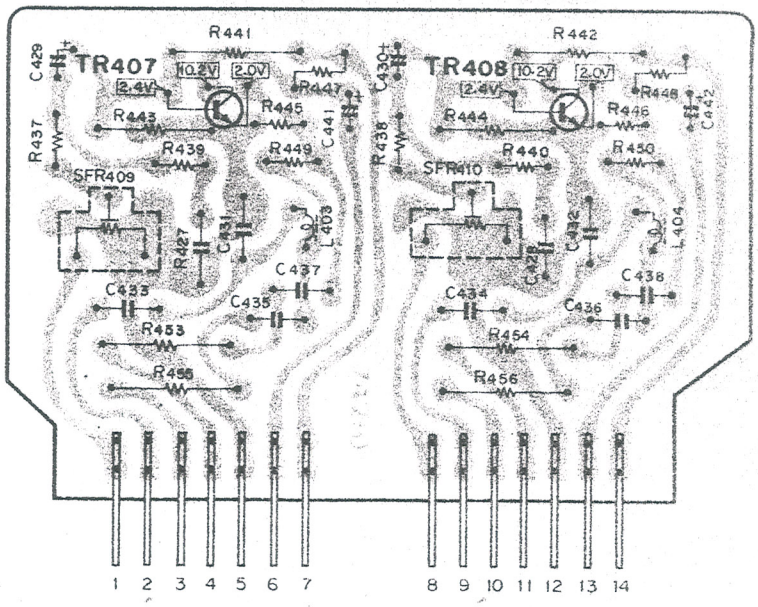
IF BLOCK CIRCUIT BOARD

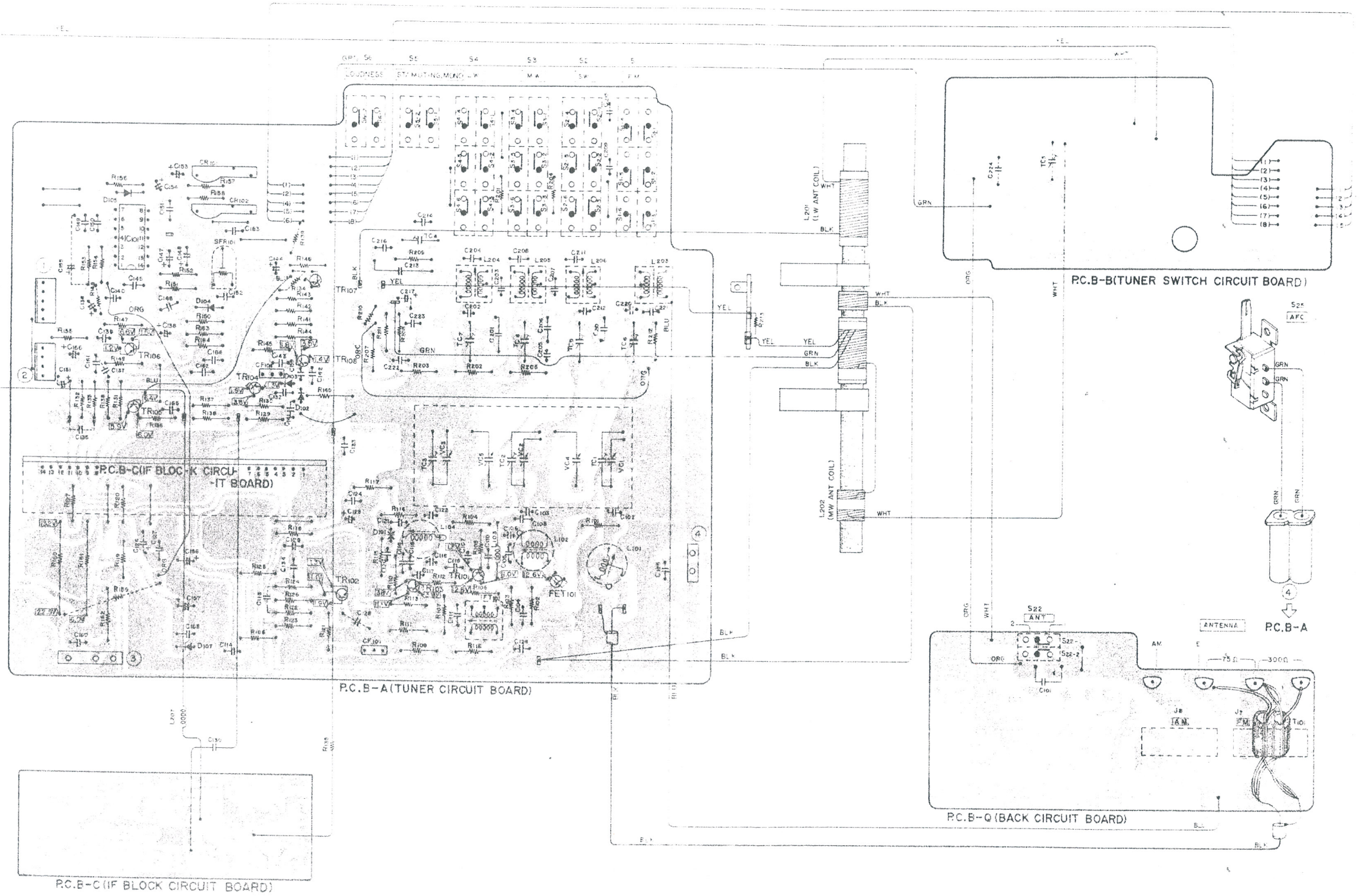


P.C.B-C
(IF BLOCK CIRCUIT BOARD)

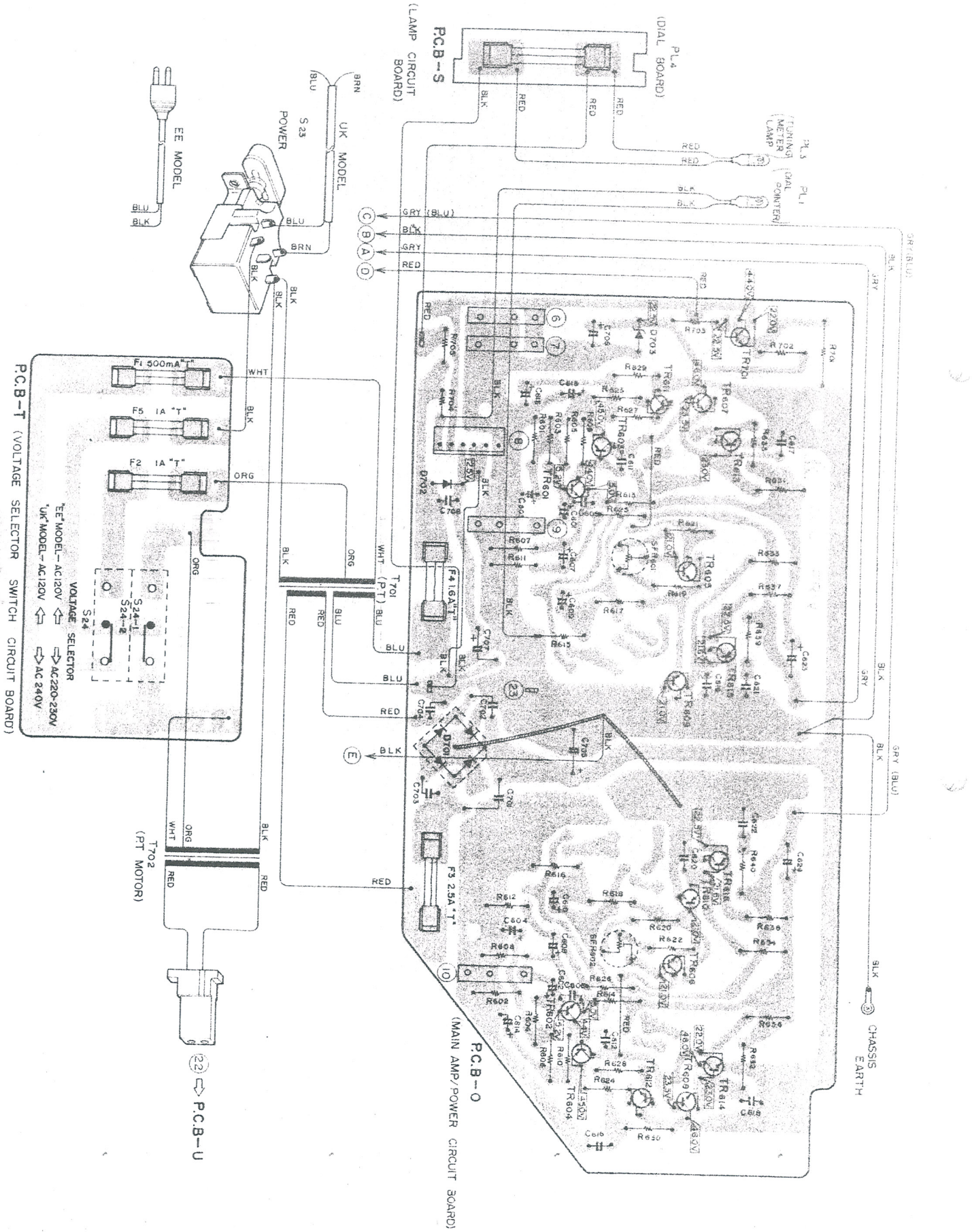
REC AMP CIRCUIT BOARD

P.C.B-E (REC AMP CIRCUIT BOARD)

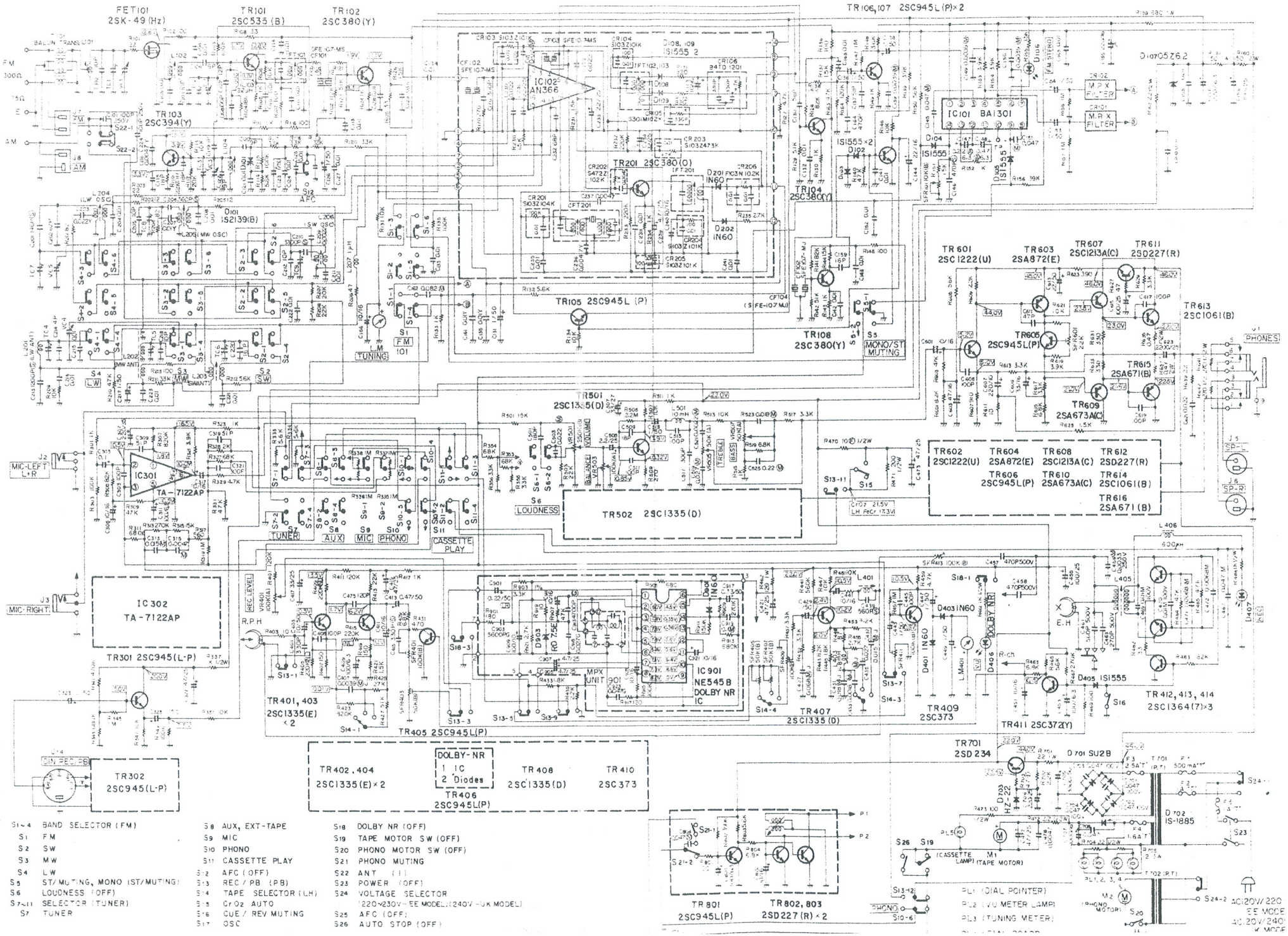



P.C.B-B(TUNER SWITCH CIRCUIT BOARD)
P.C.B-C(IF BLOCK CIRCUIT BOARD)
P.C.B-A(TUNER CIRCUIT BOARD)
P.C.B-Q(BACK CIRCUIT BOARD)
P.C.B-A
ANTENNA
AFC
ANT
AM
FM
L202 (MW ANT COIL)
L201 (LW ANT COIL)
TR101
TR102
TR103
TR104
TR105
TR106
TR107
TR108
FET101
GRN
YEL
WHT
BLK
ORG
BLU

WIRING–6


P.C.B-S
(LAMP CIRCUIT BOARD)
PL4
(DIAL BOARD)
PL3
(TUNING METER LAMP)
PL1
(DIAL POINTER)
EE MODEL
UK MODEL
S 23
POWER
P.C.B-T (VOLTAGE SELECTOR SWITCH CIRCUIT BOARD)
F1 500mA "T"
F5 1A "T"
F2 1A "T"
F4 1.6A "T"
F3 2.5A "T"
VOLTAGE SELECTOR
"EE" MODEL– AC 120V
"UK" MODEL– AC 120V
AC 220-230V
AC 240V
S24
S24-1
S24-2
T701 (PT)
T702 (PT MOTOR)
P.C.B-O
(MAIN AMP/POWER CIRCUIT BOARD)
CHASSIS EARTH
P.C.B-U

SCHEMATIC DIAGRAM


FET101 2SK-49 (Hz)
TR101 2SC535 (B)
TR102 2SC380(Y)
TR103 2SC394(Y)
TR104 2SC380(Y)
TR105 2SC945L (P)
TR106,107 2SC945L(P)×2
TR108 2SC380(Y)
TR201 2SC380(O)
IC102 AN366
IC101 BA1301
TR501 2SC1335(D)
TR502 2SC1335(D)
IC301 TA-7122AP
IC302 TA-7122AP
TR301 2SC945(L-P)
TR302 2SC945(L-P)
TR401,403 2SC1335(E) ×2
TR405 2SC945L(P)
TR406 2SC945L(P)
IC901 NE545B DOLBY NR IC
TR407 2SC1335(D)
TR409 2SC373
TR411 2SC372(Y)
TR412,413,414 2SC1364(7)×3
TR601 2SC1222(U)
TR603 2SA872(E)
TR605 2SC945L(P)
TR607 2SC1213A(C)
TR609 2SA673A(C)
TR611 2SD227(R)
TR613 2SC1061(B)
TR615 2SA671(B)
TR701 2SD234
TR801 2SC945L(P)
TR802,803 2SD227(R)×2
TR402,404 2SC1335(E)×2
DOLBY-NR 1 IC 2 Diodes
TR408 2SC1335(D)
TR410 2SC373
TR602 2SC1222(U)
TR604 2SA872(E)
TR606 2SC945L(P)
TR608 2SC1213A(C)
TR610 2SA673A(C)
TR612 2SD227(R)
TR614 2SC1061(B)
TR616 2SA671(B)
D105 05Z6.2
D106 05Z6.2
D107 05Z6.2
D108, 109 1SI555 2
D101 1S2139(B)
D102 1SI555×2
D103 1SI555
D104 1SI555
D201 FC03N102K
D202 IN60
D401 IN60
D402 IN60
D403 IN60
D404 IN60
D405 1SI555
D406 IN60
D407 1SI555
D701 SU2B
D702 IS-1885
D703 HZ-22
CR101 M.P.X FILTER
CR102 M.P.X FILTER
CR103 SFE10.7MS
CR104 SFE10.7MS
CR105 SFE10.7MS
CR106 B470-1201
CR201 5472Z-102K
CR202 5472Z-102K
CR203 SI032473K
CR204 SI032101K
CR205 SI032101K
CR206 SI032101K
CF101 SFE10.7MS
CF102 SFE10.7MS
CF103 SFE10.7MS
CF104 SFE10.7MJ
CF105 SFE10.7MJ
CF201 CFT-201
CFT102,103
L101 10mH
L204 ILW OSC
L205 MW OSC
L401
L402
L403
L404
L405
L406
L407
L501 10mH
L701
L702
L703
L704
L705
L706
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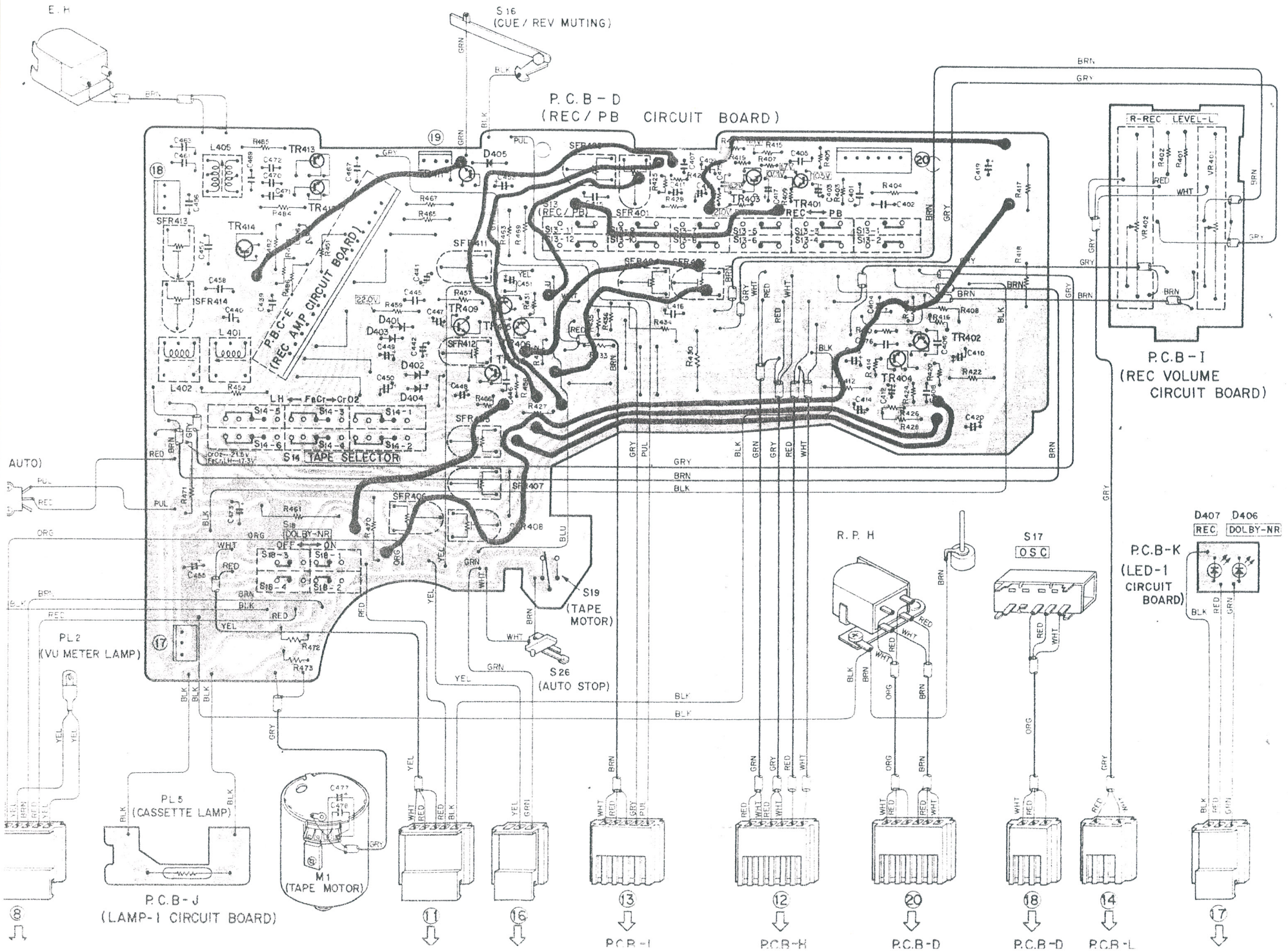
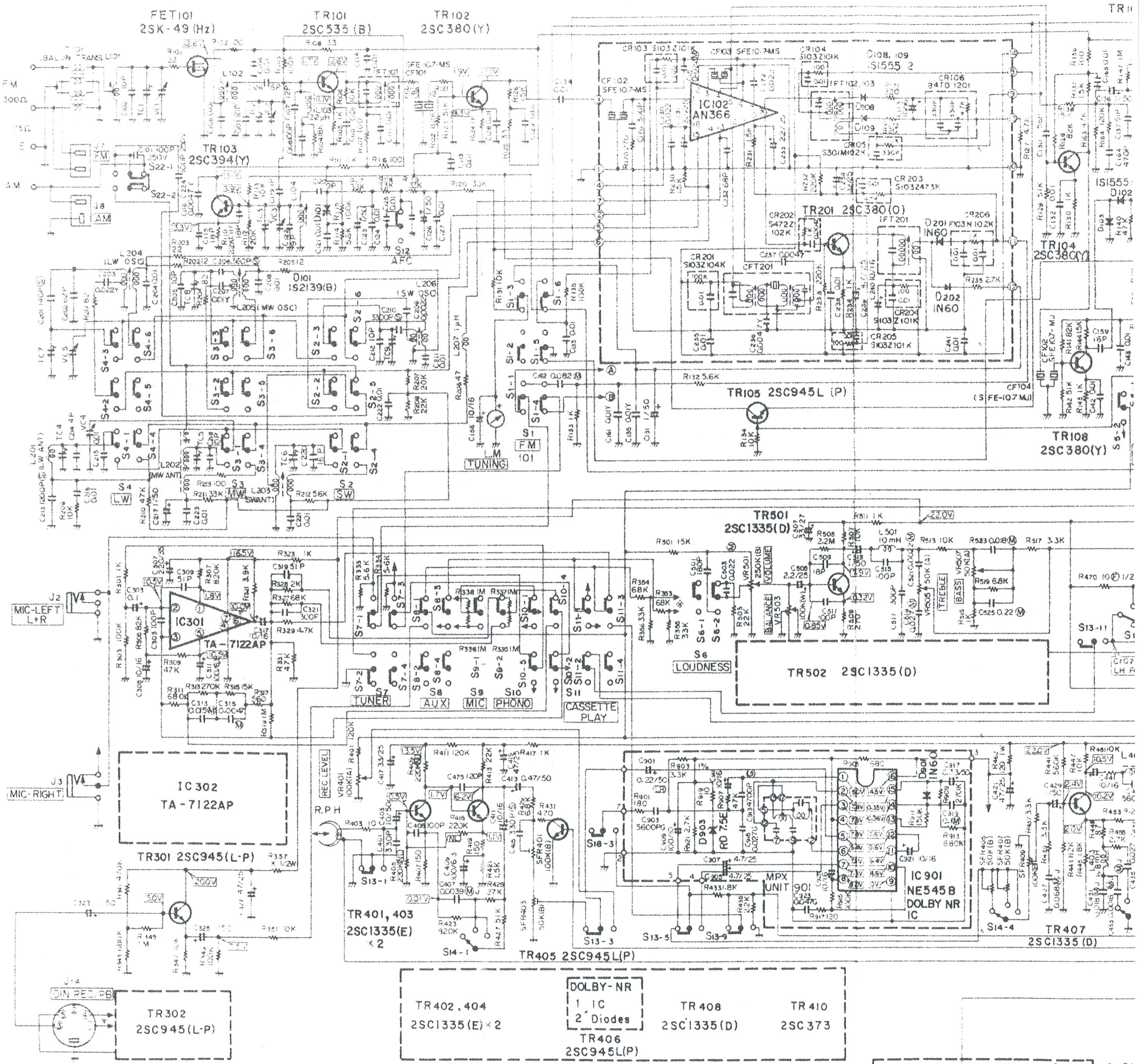
L737
L738
L739
L740

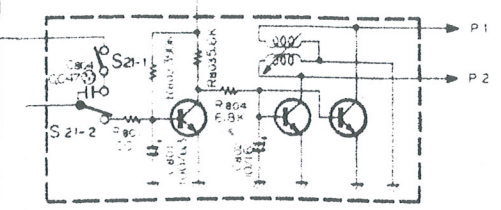

E.H
S16
(CUE / REV MUTING)
P.C.B-D
(REC/PB CIRCUIT BOARD)
P.C.B-E
(REC AMP CIRCUIT BOARD)
P.C.B-I
(REC VOLUME
CIRCUIT BOARD)
R-REC LEVEL-L
S14 TAPE SELECTOR
S13 (REC/PB)
REC ⟷ PB
S18 (DOLBY-NR)
OFF ⟷ ON
S19
(TAPE
MOTOR)
S26
(AUTO STOP)
R.P.H
S17
OSC
P.C.B-K
(LED-1
CIRCUIT
BOARD)
D407 REC
D406 DOLBY-NR
PL2
(VU METER LAMP)
PL5
(CASSETTE LAMP)
P.C.B-J
(LAMP-1 CIRCUIT BOARD)
M1
(TAPE MOTOR)
AUTO)
P.C.B-I
P.C.B-H
P.C.B-D
P.C.B-D
P.C.B-L

SCHEMATIC DIAGRAM

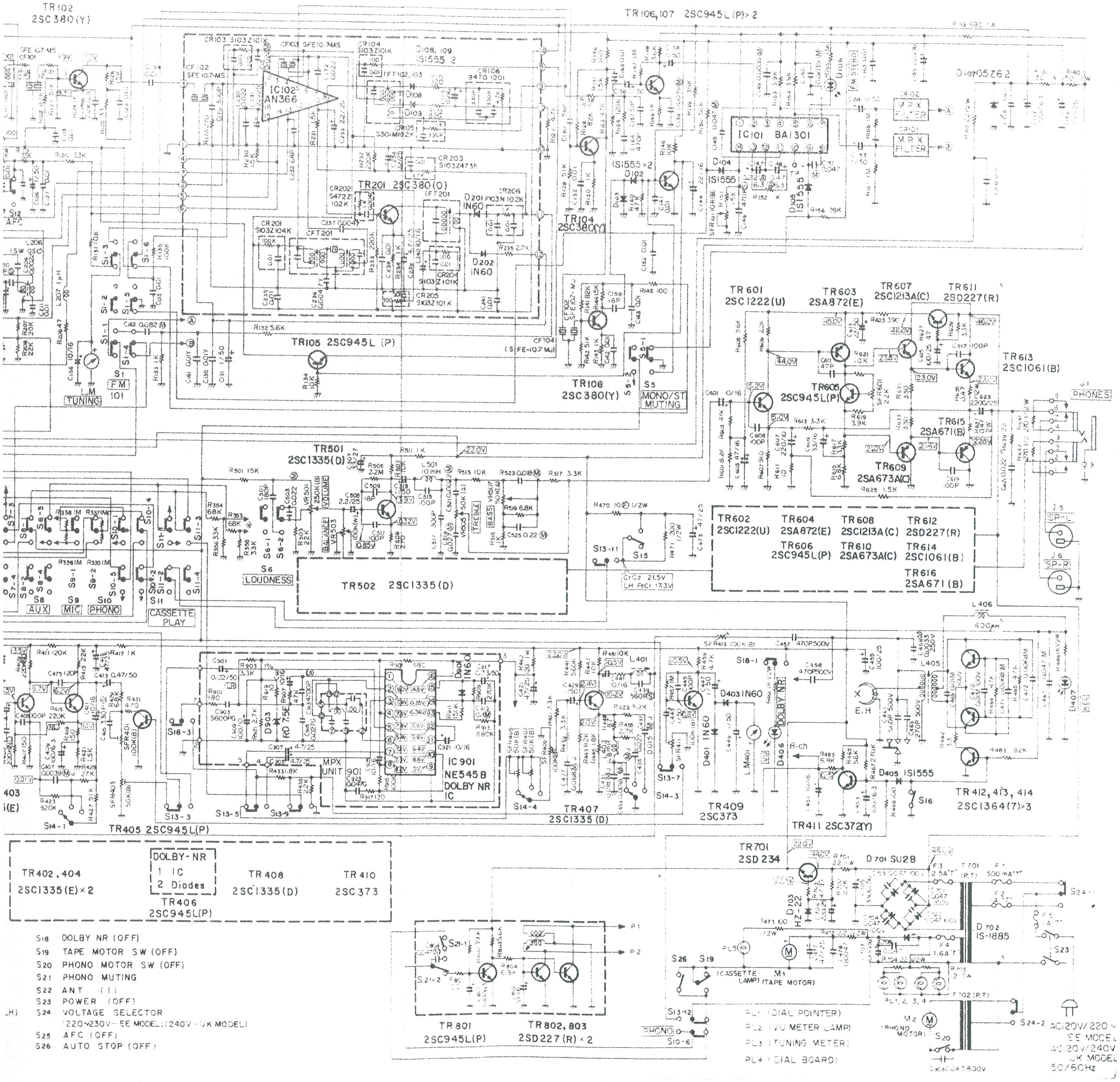


TR402, 404	DOLBY-NR	TR408	TR410
2SC1335(E)×2	1 IC 2 Diodes	2SC1335(D)	2SC373
	TR406 2SC945L(P)		

S1~4	BAND SELECTOR (FM)	S8	AUX, EXT-TAPE	S18	DOLBY NR (OFF)
S1	FM	S9	MIC	S19	TAPE MOTOR SW (OFF)
S2	SW	S10	PHONO	S20	PHONO MOTOR SW (OFF)
S3	MW	S11	CASSETTE PLAY	S21	PHONO MUTING
S4	LW	S12	AFC (OFF)	S22	ANT (1)
S5	ST/MUTING, MONO (ST/MUTING)	S13	REC/PB (PB)	S23	POWER (OFF)
S6	LOUDNESS (OFF)	S14	TAPE SELECTOR (LH)	S24	VOLTAGE SELECTOR
S7~11	SELECTOR (TUNER)	S15	Cr O2 AUTO		(220~230V-EE MODEL) (240V-UK MODEL)
S7	TUNER	S16	CUE/REV MUTING	S25	AFC (OFF)
		S17	OSC	S26	AUTO STOP (OFF)



TR801	TR802, 803
2SC945L(P)	2SD227(R)×2



S18 DOLBY NR (OFF)
S19 TAPE MOTOR SW (OFF)
S20 PHONO MOTOR SW (OFF)
S21 PHONO MUTING
S22 ANT (-)
S23 POWER (OFF)
S24 VOLTAGE SELECTOR (220~230V-EE MODEL/240V-UK MODEL)
S25 AFC (OFF)
S26 AUTO STOP (OFF)